Claims

What is claimed is:

1. A vertebral replacement implant for interposition in a space left by one or more at least partially removed vertebrae between adjacent intact vertebrae, comprising:

a first tubular body sized to span a first portion of the space between the intact vertebrae;

a second tubular body sized to span a second portion of the space between the intact vertebrae;

a connector connected to corresponding ends of the first and second bodies; and

an endplate assembly attached to the other end of the first body.

2. The vertebral replacement implant according to claim 1 further comprising:

a second endplate assembly attached to the other end of the second body.

3. The vertebral replacement implant according to claim 1 further comprising:

a second connector;

a third tubular body sized to span a third portion of the space between the intact vertebrae;

a second endplate assembly;

wherein the second connector is connected to the other end of the second body and an end of the third body; and

wherein the other end of the third body is attached to the second endplate assembly.

4. The vertebral replacement implant according to claim 1 further including a fixing assembly for securing the connector to the first and second bodies to prevent unattachment.

5. The vertebral replacement implant according to claim 4 wherein the fixing assembly includes:

a plurality of openings defined in the connector; and

a first member extendable through one of the plurality of openings into contact with the first body; and

a second member extendable through another of the plurality of openings into contact with the second body.

6. The vertebral replacement implant according to claim 5 wherein:

the first and second members are set screws; and

the plurality of openings are threaded to receive the set screws in threaded engagement.

7. The vertebral replacement implant according to claim 1 wherein the connector includes:

a generally cylindrical wall defining a bore therethrough, the wall having opposite end sections.

8. The vertebral replacement implant according to claim 7 wherein the connector further includes:

first threads defined on each of the opposite end sections.

9. The vertebral replacement implant according to claim 8

wherein the ends of the first and second bodies have second threads defined thereon configured to threadedly engage the first threads on the connector.

10. The vertebral replacement implant according to claim 1 further comprising:

one or more openings extending through the first tubular body and sized to allow a graft material entry into the first body.

11. The vertebral replacement implant according to claim 1 further comprising:

a basket, wherein the endplate assembly has a cylindrical portion defining a bore therethrough and wherein the basket is disposed within the bore.

12. The vertebral replacement implant according to claim 1 wherein the connector creates an angle of less than 180 degrees between the first tubular body and the second tubular body.

13. The vertebral replacement implant according to claim 1 further comprising a support assembly connected to one of the members for securing the assembly to the intact vertebrae.

14. A vertebral replacement implant assembly for interposition in a space left by one or more removed vertebrae, comprising:

at least three adjacent tubular bodies; and

at least two tubular connectors threadedly engaged between the adjacent tubular bodies, wherein the height of the assembly is varied by varying the threaded engagement.

15. A vertebral replacement implant assembly for inserting in a space left by one or more at least partially removed vertebrae between adjacent intact vertebrae, the implant assembly comprising at least two elongated members disposed in the space, a connector member connected between adjacent elongated members in a manner so that movement of one of the members adjusts the dimension of the implant assembly relative to the space.

16. The implant assembly of claim 15 wherein the connector member is threadedly engaged to at least one of the elongated members so that rotation of one of the members relative to one other member adjusts the dimension of the implant assembly.

17. The implant assembly of claim 15 wherein the members are connected end-to-end and the rotation causes relative axial movement between the members.

18. The implant assembly of claim 15 wherein the connector member is threadedly connected to both elongated members.

19. The implant assembly of claim 15 wherein the threaded engagement is such that rotation of the connector member causes axial movement of both elongated members relative to the connector.

20. The implant assembly of claim 15 wherein the members are tubular with openings formed therethough and are sized to allow a graft material entry into the hollow interior.

21. The implant assembly of claim 15 wherein the an end portion of each of the elongated members is threaded and an entire surface of connector member is threaded to receive the threaded end portions.

22. The implant assembly of claim 21 wherein the inner surface of the connector member and the outer surfaces of the end portions of the elongated members are threaded.

23. The implant assembly of claim 21 wherein the outer surface of the connector member and the inner surfaces of the end portions of the elongated members are threaded.

24. A vertebral replacement implant for interposition in a space left by one or more removed vertebrae between adjacent intact vertebrae, comprising:

a tubular body having opposite ends and sized to span at least a portion of the space between the intact vertebrae;

a pair of endplate assemblies attached to each of the opposite ends of the body, each of the endplate assemblies having an end surface and a tubular portion defining a bore therethrough extending through the end surface; and

a basket disposed within at least one of the bores.

25. The vertebral replacement implant according to claim 24 wherein the basket is suitable for receiving graft material.

26. The vertebral replacement implant according to claim 24 wherein the basket extends into the tubular body.

27. The vertebral replacement implant according to claim 24

wherein the basket includes at least one positioning tab; and

wherein the end surface includes at least one positioning recess configured to engage the at least one positioning tab.

28. The vertebral replacement implant according to claim 24

wherein the cylindrical portion has first threads defined thereon; and

wherein the basket has second threads thereon configured to threadedly engage the first threads on the cylindrical portion.

29. The vertebral replacement implant according to claim 24

wherein the basket includes one or more apertures.

30. The vertebral replacement implant according to claim 29 wherein the apertures extend over more than 50% of the basket.

31. The vertebral replacement implant according to claim 24, wherein the tubular body includes a wall defining a hollow interior, the wall further defining a plurality of openings therethrough, the openings being in communication with the hollow interior.

32. The vertebral replacement implant according to claim 31, wherein the openings are sized to allow a graft material entry into the hollow interior.

33. The vertebral replacement implant according to claim 31, wherein after the interposition in the space left by one or more vertebrae, at least one of the openings is accessible.

34. The vertebral replacement implant according to claim 31,

wherein the basket includes one or more apertures; and

wherein the openings are sized to provide a line of sight through the openings, through the hollow interior, through the one or more apertures, and into the cavity of the basket.

35. A vertebral replacement implant for interposition in a space left by one or more removed vertebrae between adjacent intact vertebrae, comprising:

a first tubular body sized to span a portion of the space between the intact vertebrae and having a plurality of openings extending therethrough and sized to allow a graft material entry into the first tubular body.

36. The vertebral replacement implant of claim 35 further comprising:

a pair of endplate assemblies attached to each end of the first tubular body.

37. The vertebral replacement implant of claim 35 further comprising:

a pair of endplate assemblies attached to each end of the first tubular body, each of the endplate assemblies having an end surface and a cylindrical portion defining a bore therethrough extending through the end surface; and

a basket disposed within at least one of the bores.

38. The vertebral replacement implant of claim 35 further comprising:

a second tubular body sized to span a portion of the space between the intact vertebrae and having a plurality of openings extending therethrough and sized to allow a graft material entry into the second tubular body.

a connector connected to corresponding ends of the first and second tubular bodies; and

a pair of endplate assemblies attached to the other ends of the first and second tubular bodies.

39. The vertebral replacement implant of claim 35 wherein after the interposition in the space left by one or more vertebrae, at least one of the large openings is accessible for entry of the graft material.

40. A graft containment device for use with a vertebral implant having an internal cavity, the graft containment device comprising:

a sidewall;

an open end; and

an engagement device for maintaining the graft containment device within the cavity of vertebral implant.

41. The graft containment device of claim 40 wherein the engagement device suspends the graft containment device within the cavity of the vertebral implant.

42. The graft containment device of claim 40 wherein the engagement device comprises at least one tab.

43. The graft containment device of claim 40 wherein the engagement device comprises a flange integrated with the sidewall.

44. The graft containment device of claim 40 wherein engagement device comprises external threads.

45. A graft containment apparatus for use with a vertebral implant having an internal cavity, the graft containment apparatus comprising:

a sidewall including an outer surface adapted to engage the vertebral implant.

46. A tubular vertebral implant device for interposition between two vertebral endplates, the tubular vertebral implant device comprising

a tubular assembly having a sidewall; and

a graft containment device, having an open end, disposed in at least one end of the tubular assembly.

47. The vertebral implant device of claim 46 wherein the graft containment device is removable.

48. The vertebral implant device of claim 46 wherein the tubular assembly is expandable.

49. The vertebral implant device of claim 46 further comprising windows through the sidewall to permit the placement of graft material into the tubular assembly.

50. The vertebral implant device of claim 46 wherein the graft containment device opens toward the adjacent vertebral endplate.

51. The vertebral implant device of claim 46 wherein the graft containment device extends less than half the length of the side wall.

52. The vertebral implant device of claim 46 wherein the sidewall comprises a plurality of apertures extending over more than half of the sidewall.

53. The vertebral implant device of claim 46 wherein the graft containment device comprises a resorbable material.

54. A method of installing a vertebral implant device, the vertebral implant device having a supporting tubular member and a graft containment device adapted to be received within a portion of the tubular member, the method comprising:

packing the graft containment device with bone growth promoting material;

positioning the graft containment device in the tubular member; and

implanting the vertebral implant device between a pair of vertebral endplates of a spine.

55. The method of claim 54 further comprising filling at least a portion of the vertebral implant with bone growth promoting material.

56. The method of claim 54 further comprising moving the graft containment device toward the adjacent vertebra thereby creating a space within the vertebral implant device.

57. The method of 54 further comprising filling at least a portion of the space with bone growth promoting material.